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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re patent application of:

ZEENAT, Jetha et al.

Serial No.: 10/619,555 Group Art Unit: 2173

Filed: July 16, 2003

Title: A Graphical User Interface Having An Attached Toolbar For Drag and Drop Editing In Detail-In-Context Lens Presentations

November 11, 2003

The Commissioner of Patents & Trademarks
Washington, D.C. 20231

PRIORITY CLAIM

Dear Sir:

The benefit of the filing date in Canada of a patent application corresponding to the above-identified application, is hereby claimed under Rules 37 CFR 1.55 and 35 U.S.C. 119 in accordance with the Paris Convention for the Protection of Industrial Property. A certified copy of the corresponding Canadian patent application bearing Serial No. 2,393,887 filed July 17, 2002, is submitted herewith.

Respectfully submitted,

Nov. 11/03
Date

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Certification

La présente atteste que les documents ci-joints, dont la liste figure ci-dessous, sont des copies authentiques des documents déposés au Bureau des brevets.

Canadian Patent Office

Certification

This is to certify that the documents attached hereto and identified below are true copies of the documents on file in the Patent Office.

Specification and Drawings, as originally filed, with Application for Patent Serial No: **2,393,887**, on July 17, 2002, by **IDELIX SOFTWARE INC.,** assignee of Zeenat Jetha, David Baar, Andrew Carlisle and Maria Lantin, for "Enhancements to user Interface for Detail-In-Context Data Presentation".

Agent certificateur/Certifying Officer

July 16, 2003

Date

Canada

(CIPO 68)
04-09-02

OPIC CIPO

Enhancements to User Interface for Detail in Context Data Presentation

Background

The IDELIX PDT lens may be used in a variety of modes. Some modes allow the user to change the manner in which information is displayed. For example the user may change between a pyramid shaped lens to a cone shaped lens. Other modes allow the user to edit the data that the lens is applied to. For example, the user may change the colour of a pixel, or add a label to the source data. The manner in which the user changes modes may be accomplished through keyboard commands, and/or a toolbar. The ideas presented here further enhance the user interface for detail in context data presentation.

Description

In order to make a toolbar easily accessible, the idea here is to attach the toolbar to the lens itself. As the lens moves, the toolbar may move with the lens, following the user as they home in on points of interest. In this way, if the user decides to change lens modes, the toolbar is exactly where they require it -- near the lens. Figure 1 shows an example of a toolbar attached to the lens.

Figure 1. Example of a toolbar attached to the lens.

Details

The toolbar does not have to be visible at all times. The top left resize control may be used to popup and hide lenses. The toolbar may be transparent, like the rest of the MDLC controls. The toolbar does not have to be docked at the lens. A bar or symbol on the toolbar may be clicked on to turn the toolbar into a floating toolbar. A toolbar may extend down any side of the MDLC controls. A vertical toolbar is shown in Figure 2.

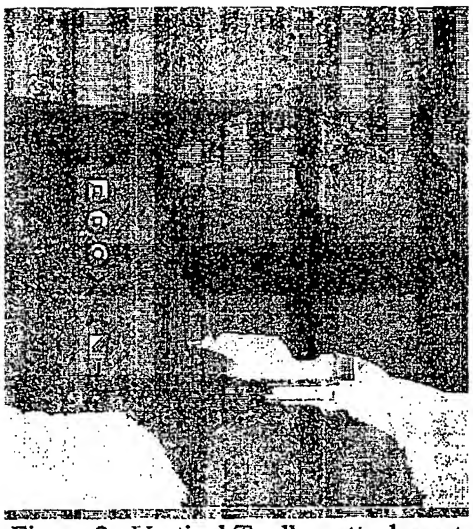

Figure 2. Vertical Toolbar attachment

The toolbar may be created using MDLC. The toolbar may be resized. The manner in which the toolbar buttons are made visible may be based on the location of lens. The closer the toolbar button is to the mouse, the bigger it is (kind of like a magnifying glass moving over the lens). A scroll option may be provided to see additional toolbar buttons. It may also be used to show and hide the toolbar. See Figure 3.

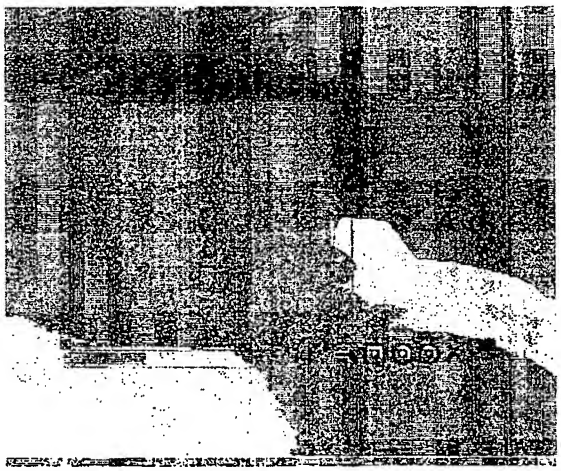

Figure 3. Arrow indicating more toolbar options.

The MDLC handles may be tool buttons as shown in Figure 4. The toolbar buttons may extent the entire lens boarder, not just the handles.

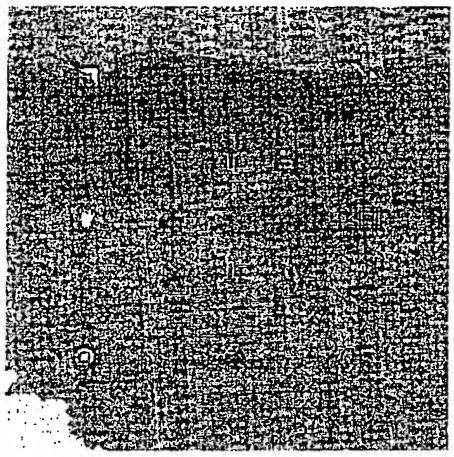

Figure 4: Handles as toolbar button.

Variations

1. The icons may represent other applications that are currently running. By clicking on the icon, the user is able to switch from one application to another from within an application. The icons may also be also be used to indicated which processes are currently running. For example, one of the icons may indicate that printing is in progress, or that retrieving high resolution data through the lens is in progress.

2. The icons may also represent a series lens configurations with selection. This idea is explained in more detail next.

Many drawing applications have sophisticated methods for selecting an area of interest. In the picture below, a specific area of the image has been selected.

Figure 5: Image cropping

Once an image is selected, a lens is attached to the selection. Any point in the selected object may be chosen to be in the centre of the lens focus.

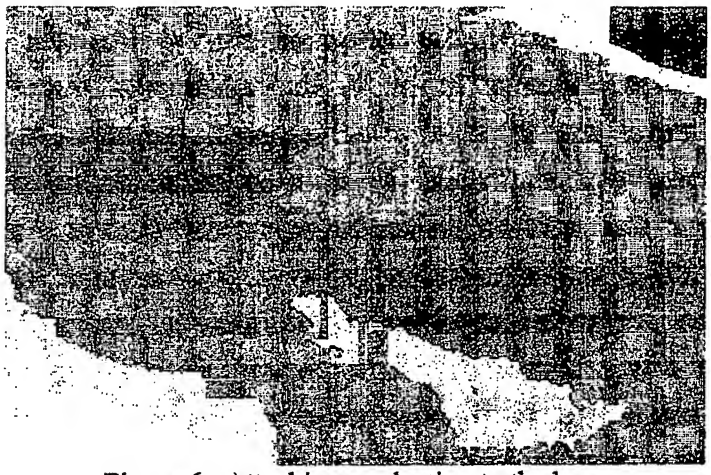

Figure 6. Attaching a selection to the lens.

The lens may be configured in the usual way. That is, the shape, size, magnification, scoop, and fold may all be carefully tuned for this selected object. The lens may be configured before attaching the selected object or after.

Now when the lens moves, the attached selected objected moves too. Figure 7 demonstrates the lens behaving as a carrier lens.

Figure 7: Dragging a lens with a selected objected.

Since the magnification of the focus is larger than the base image, this idea of dragging a lens with a selected object makes it considerably easier to line up a selected object with another object in the scene. For example, the magnification in the focus may be set up at pixel level resolution. As the lens with its selected object moves next to another object, the other object also gets magnified to the same resolution. As a result the precision of attaching, or lining up, the two objects together is more accurate than without the lens. Through out this procedure, the user is able to see the detail and context. Finally, once the objects are lined up, the object attached to the lens may be released and re-associated with the underlying data.

The idea above may be used for not only raster-based data, but also vector based data. In this case, vector objects become attached to the lens and are lined up with other vector data or raster data. Text may also be attached to the lens and dragged around. Other entities such as icons and 3D objects may also be attached and dragged with the lens. For instance, an icon representing a file or an application may be attached to the lens and then dragged to the recycle bin for disposal. Or a 3D object such as a chair may be carried by the lens and moved to a new location.

Any number of these configured lenses with their selected objects may be saved. They may be saved in the toolbar, the MDLC toolbar, or as a list of bookmarks. These saved configured lenses and their associated object may be re-pasted into the working scene at any time.

Since configuring takes time, it may be useful to save just the pre-configured lens for later use. A number of pre-configured lenses may be saved in the toolbar, in the MDLC toolbar, or in some kind of list where the user is able to define the name of the pre-configured lens.

The lens may also be saved with more than object attached to it. When the lens moves, all its associated objects move too.

Although it was mentioned earlier that many packages have sophisticated means of cropping objects, it still may be useful to use the shape of the lens to perform a crop operations. Lens shapes come in many forms such as square or circular and may be modified on the fly to form a new shape. The newly shaped lens may then be used as a cookie cutter or copier to crop, move, and paste objects into the current scene, or a new scene. After performing a lens shaped cut, the lens may extend out beyond the bounds of the cropped area allowing the lens to provide some context. If the data being cropped has layers, or is 3D, then the crop may also include the data at different depths. The depth of the crop operation may be specified through the lens.

Application to "Photo Kiosks":

"Photo Kiosks" are essentially specialized workstations connected with high quality printers for processing and printing digital images, typically for a fee paid by the user. These Photo Kiosks typically have touch-sensitive screens ("touchscreens") for user input. Photo Kiosks are an excellent candidate for the use of the user interface described in the present document. For example, the lens extent handles and focus handles can be used to select the region or regions of a displayed photo which are to be printed or otherwise processed, and then the attached toolbar can be used to select the processing or printing operation to be performed. An additional possibility is that icons at the corners of the focus or lens extents (the handles) be changed to reflect the operation that is occurring (printing, copying, or other processing of the image or of a part of the image). Moreover, the idea of dragging a lens with a selected object is useful for adding flowers, hearts, text,

background images or other enhancements into the photo as it provides some enhanced placement precision.